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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/338,045	06/22/1999	MARTIN JOHN TROTTER	UK998092	9881

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JAY P SROLLINI
IBM CORP IP LAW DEPT
T J WATSON RESEARCH CENTER
P O BOX 218
YORKTOWN HEIGHTS, NY 10598

EXAMINER

PARDO, THUY N

ART UNIT

PAPER NUMBER

2175

DATE MAILED: 01/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/338,045

Applicant(s)

TROTTER, MARTIN JOHN

Examiner

Thuy Pardo

Art Unit

2175

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 08 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-30 and 33-37 is/are rejected.
- 7) ☒ Claim(s) 31, 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's Amendment filed on October 08, 2002 in response to Examiner's Office Action has been reviewed. Claims 1-20 have been canceled and claims 21-37 have been added.
2. Claims 21-37 are presented for examination.

Title

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 21-28 and 37 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. The claim merely sets forth a method of retrieving object references in a thread stack, not a concrete method or a computer program product. According to the examination Guidelines for Computer-Related Inventions, 1206 OG 211, see also M.P.E.P 2106, a statutory process must either result in a physical transformation outside the computer for

which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or be limited by the language of the claim to a practical application within the technological arts. The content of these claims does not constitute a statutory process, machine, manufacture or composition of matter. Correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 21-30 and 33-37 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Houldsworth** patent no. 6,314,436, in view of **Ebrahim et al.** (Hereinafter "Ebrahim") U.S. Patent No. 5,848,423.

7. As to claim 21, Houldsworth teaches the invention substantially as claimed, comprising:
retrieving an object data structure from the stack [col. 5, lines 46-48; 601, 608 of fig. 6];
extracting an object reference from one part of the data structure [605, 612 of fig. 6; 801 of fig. 8]; and
extracting a reference to the next data structure in the stack from another part of the data structure [805 of fig. 8; col. 6, lines 49-54].

However, Houldsworth does not explicitly teach the extracted object references forming a root set of object references. Ebrahim teaches the extracted object references forming a root set of object references [see the abstract].

Therefore, it would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to have modified the system of Houldsworth wherein the tracing garbage collectors provided thereof would have incorporated the teachings of Ebrahim especially the methodology of locating root set of object references; the motivation being to expand and enhance the versatility of Ebrahim's system by efficiently locating object references in the program stack during garbage collection [Ebrahim, col. 1, lines 10-12].

As to claims 29 and 37, all limitations of these claims have been rejected in the analysis of claim 1 above, and these claims are rejected on that basis.

The limitations of claims 22-28, 30, and 33-37 were addressed, with the exception of the amendments to their parent claims 1, 29, and 37, in the previous action, and these claims are rejected on that basis.

Allowable Subject Matter

8. Claim 31 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 31, storing a variable pointing to the previously stored object data structure at the top of the stack, using the variable when storing a new object data structure, and updating the variable with the new object data structure reference, taken together with other limitations of claims 29, 30 was not disclosed by the prior art of record.

Claim 32 being further limiting to claim 31 is also objected to.

10. Applicant's arguments with respect to claims 21-30 and 33-37 have been considered but are moot in view of the new ground(s) of rejection.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy Pardo, whose telephone number is (703) 305-1091. The examiner can normally be reached Monday through Thursday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black, can be reached at (703) 305-9707.

The fax phone number for the organization where this application or proceeding is assigned are as follows:

(703) 746-7238	(After Final Communication)
(703) 746-7239	(Official Communication)
(703) 746-7240	(For Status inquiries, draft communication)

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and/or:

(703) 746-5616 (Use this Fax#, only after approval by Examiner, for "INFORMAL" or "Draft" communication. Examiner may request that a formal/amendment be faxed directly to then on occasions).

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

12. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

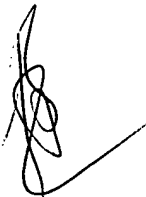
(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-5359, (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).



Thuy Pardo
January 10, 2003